

OVERVIEW OF

Emissions and Health Impacts from Diesel Trucks and Buses

Reducing emissions to protect public health

Exposure to diesel particulate matter, or soot, is a significant health hazard, particularly to children whose lungs are still developing, the elderly, and those with pre-existing health problems. Diesel vehicle exhaust also produces gaseous pollution which can react in the atmosphere to form additional particulate matter and/or ozone, commonly known as smog. Exposure to smog has similar adverse health impacts.

Most Californians are exposed to unhealthy air quality. The San Joaquin Valley and South Coast air basin are the two areas in the nation that have the farthest to go to meet health based federal air quality standards for particulate matter and ozone. To address these health concerns, ARB adopted a Diesel Risk Reduction Plan in 2000 aimed at reducing diesel particulate matter emissions by 85 percent by 2020, as well as comprehensive plans to reduce smog pollution. More than a dozen actions have been taken to implement these plans. This year, staff is developing a new regulation to reduce emissions from diesel-powered trucks and buses, the largest remaining unregulated source of diesel emissions.

Which vehicles would be affected by the proposed statewide truck and bus regulation, and what would the regulation require?

The Statewide Truck and Bus Regulation would apply to diesel-fueled vehicles with a manufacturer's gross vehicle weight rating greater than 14,000 pounds and to diesel shuttle buses of any weight class that operate in California. This regulation would apply regardless of where the vehicle is registered and also applies to yard trucks and other vehicles that are not registered. On the other hand, the following diesel vehicles would not be subject to the regulation: motor homes for non-commercial private use, military tactical vehicles, and emergency vehicles.

The regulation would require particulate matter exhaust retrofits in 2010 and 2011, and engine modernization from 2012 to 2022. The regulation would also provide flexibility by allowing fleets to choose a fleet average compliance option, which makes it easier to upgrade their fleets with newer, used vehicles.

What health impacts would be associated with emissions produced by the affected vehicles?

The diesel emissions from trucks and buses contribute to higher particulate matter levels. It is estimated that these emissions will result in 11,000 premature deaths statewide between 2010 and 2020. Current estimates¹ of health impacts statewide over this period include:

- 11,000 premature deaths
- 2,400 hospital admissions due to respiratory causes
- 4,400 hospital admissions due to cardiovascular causes
- 320,000 cases of asthma-related and other lower respiratory symptoms
- 26,000 cases of acute bronchitis
- 1,900,000 work loss days
- 11,000,000 minor restricted activity days

Staff estimates that the economic value associated with the above health impacts would be tens of billions of dollars.

What proportion of statewide emissions is produced by the vehicles that would be affected?

As shown below, emissions from the vehicles that would be affected by the proposed truck and bus regulation are substantial. The vehicles that would be affected by the proposed regulation produce approximately 40 percent of the statewide emissions of NO_x and about 32 percent of the statewide particulate matter emissions generated by diesel mobile sources.

What air quality benefits would the regulations achieve?

The proposed Truck and Bus Regulation is currently being developed and emission benefits estimates have not been finalized. However, the goals of the proposed regulation and other adopted regulations are to achieve the Diesel Risk Reduction Plan goal of 85 percent reduction in diesel particulate matter emissions and to achieve substantial reductions of NO_x emissions and are a key element in achieving healthful air quality.

For additional information

Please contact ARB's diesel hotline at (866) 6DIESEL (634-3735) or visit www.arb.ca.gov/dieseltruck.

You may also obtain this document in an alternative format by contacting ARB at: (916) 322-4505 (voice); (916) 324-9531 (TDD, Sacramento area only); or (800) 700-8326 (TDD, outside Sacramento). TTY/TDD/Speech-to-Speech users may dial 711 for the California Relay Service.

Notes:

¹ Staff is currently updating the methodology for estimating premature death associated with long-term PM exposures. Thus, the estimate for premature deaths will be revised when the methodology is finalized.